CLAIMS

1. A DNA according to any one of (a) to (i),

(a) a DNA encoding a protein comprising the amino acid sequence of SEQ ID NO: 2,

(b) a DNA comprising the coding sequence of the nucleotide sequence of SEQ ID NO: 1,

(c) a DNA encoding a protein comprising an amino acid sequence in which one or more amino acids of the amino acid sequence of SEQ ID NO: 2 have been substituted, deleted, inserted and/or added, wherein said DNA encodes a protein having the activity of binding to Reg protein,

(d) a DNA hybridizing to a DNA comprising the nucleotide sequence of SEQ ID NO: 1, wherein said DNA encodes a protein having the activity of binding to Reg protein,

(e) a DNA encoding a protein comprising the amino acid sequence of SEQ ID NO: 4,

(f) a DNA comprising the coding region of the nucleotide sequence of SEQ ID NO: 3,

(g) a DNA encoding a protein comprising the amino acid sequence in which one or more amino acids of the amino acid sequence of SEQ ID NO: 4 have been substituted, deleted, inserted and/or added, wherein the DNA encodes a protein having the activity of binding to Reg protein,

(h) a DNA hybridizing to a DNA comprising the nucleotide sequence of SEQ ID NO: 3, wherein said DNA encodes a protein having the activity of binding to Reg protein,

(i) a DNA encoding a partial peptide of a protein comprising the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4.

2. A protein or peptide encoded by the DNA according to claim 1.

3. A vector into which the DNA according to claim 1 has been inserted.

4. A host cell carrying the vector according to claim 3.

5. A method for producing the protein or peptide according to claim 2, wherein said method comprises the following steps of,

(a) culturing the cell according to claim 4, and,

(b) recovering the recombinant protein expressed by the cell from the cultured cell or from the culture supernatant.

6. An antibody against the protein or peptide according to claim 2.

7. A polynucleotide comprising at least 15 nucleotides, wherein said polynucleotide hybridizes with a DNA selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 3, and DNA complementary thereto.

8. A method of screening for a compound that binds to the protein or peptide according to claim 2, wherein said method comprises the following steps of,

(a) contacting the protein or peptide with a test sample,

(b) detecting the binding of the test sample to the protein or peptide, and,

(c) selecting a compound that binds to the protein or peptide.

9. A method of screening for a compound that inhibits the binding of Reg protein to the protein or peptide according to claim 2, wherein said method comprises the following steps of,

(a) contacting Reg protein with the protein or peptide according to claim 2 in the presence of a test sample,

(b) detecting the binding of Reg protein to the protein or peptide according to claim 2, and,

(c) selecting a compound that decreases the binding.

10. A compound isolated by the method according to claim 9, wherein said compound inhibits the binding of Reg protein to the protein or peptide according to claim 2.

11. A method of screening for a compound that promotes or inhibits signal transduction caused by an activation of the protein according to claim 2, wherein said method comprises the following steps of,

(a) contacting Reg protein with a cell expressing the protein according to claim 2 on the cell surface, in the presence of a test sample,

(b) detecting a change of the cell in response to the stimulation by Reg protein,

(c) selecting a compound that enhances or suppresses the change

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of the cell as compared to when detected in the absence of the test sample.

12. The method according to claim 11, wherein said change of the cell detected comprises a change in cell-proliferating activity or DNA-synthesizing activity of the cell.

13. A compound isolated by the method according to claim 11 or 12, wherein said compound promotes or inhibits signal transduction caused by an activation of the protein according to claim 2.

14. A pharmaceutical agent comprising the DNA according to claim 1, the protein or peptide according to claim 2, the vector according to claim 3, the antibody according to claim 6, or the compound according to claim 10 or claim 13.

15. The pharmaceutical agent according to claim 14, wherein said pharmaceutical agent is selected from the group consisting of a Reg-binding agent, a regulator of intracellular signal transduction of cells responding to Reg protein, a cell growth regulator, a DNA synthesis regulator, and an apoptosis regulator.

16. The pharmaceutical agent according to claim 14 or claim 15, wherein said pharmaceutical agent is an anti-diabetic drug.